

METEOROLOGICAL OFFICE
NEWSLETTER
FOR
CLIMATOLOGICAL OBSERVERS
IN
ENGLAND AND WALES

No 2
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Produced by:

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Editorial

Our first issue last September appears to have been well received and there has been a good response by letter - thank you for these. I am publishing a selection of these, particularly where points of common interest are brought up. My apologies where extracts only are printed but space is rather limited.

There has been one change at Bracknell since last writing. John Humphreys who was the Met O 3 sunshine specialist has moved to the Central Forecasting Office and in his place Philip Doherty has arrived from Belfast/Aldergrove Airport on short detachment.

Desiree Allen, George Swift and myself met a number of observers at Shinfield Park during the Autumn/Winter period. These courses are always well-subscribed but George (ext 2266) can normally offer alternative dates if particular courses are full. It almost goes without saying that new observers will be very welcome to attend and from all accounts everyone seems to enjoy themselves both in the classroom and out. Observers who have attended courses before can be accepted if there is room on a course.

Observers at Shinfield seem to me like policemen - they become younger every year. Nevertheless on my inspections last year I met a number of observers who are retired and who maintain their daily routine through thick and thin. Mr Sculthorpe of Cromer, for instance, is in charge of the Cromer station owned by the local Council and incidentally has a sharp climb to the top of a fairly steep and high hill on which the station stands and this is accessible only on foot. I have often wondered how he has managed this winter. We had a number of sympathetic comments in the late Autumn on the experiences of Mr Sampson, the Chawleigh (Devon) observer during a severe wintry spell there which was related in our first issue. I feel sure that since then many observers have had or are still having similar experiences in this winter (I am writing this in the middle of February). Mention should certainly be

made here of Mr Findlay from Middleton-in-Teesdale who travels 9 miles to the Nature Conservancy site at Widdybank Fell, Durham, and who sometimes covers the last few miles on skis! I hasten to add that the skis are not official issue so observers contemplating Winter sports in Switzerland are asked not to write in about the difficulties of getting to the screen in thick snow and asking for skis to be put on inventory loan.

A number of extremes must have been exceeded in various parts of the country though those observers whose memory and records go back to 1947 and 1963 must be busy comparing figures to see whether this is the case or not. In any case climatological observers were probably among the few who were not surprised by this winter weather, because we all know most seasons have their particular character and recent winters have generally tended to be mild so sooner or later the means had to come down towards their long-term average. I hope the summer will also provide some new extremes - the right way, of course.

David Smith

AREAL QUALITY CONTROL

In the first newsletter I pointed out the most common errors that our computer quality control programs discover. The checks I mentioned were all consistency checks ie checking one element against another element in the same observation. These checks do pick out a large proportion of the doubtful values. However these checks do have limitations. To further improve the data we therefore subject the data to an areal check. To do this we have divided the British Isles into 80 small climatological areas consisting of 7 to 14 stations. In defining these areas we relied a great deal on our knowledge of each station's climatological history.

When most of the data is on our data-sets and the consistency errors have been resolved the areal program is run on the computer. The assumption is made that stations within each area will have similar maximum, minimum and sunshine readings for each day. Each station's average for the month is calculated and allowance for this is made when checking daily values. For example a station with a low average temperature for the month would fail the preset limits more easily if it was warmer than other stations on a particular day. In this way values out of step with other stations values for the same day are identified for us to examine more closely.

Many of you will have had a query letter from us requesting a check on a particular value because "it differs from stations around you". This query would have been raised by areal quality control.

As with all the queries we raise we are usually asking for you to confirm the value reported. If you consider the queried value to be correct please tell us so, but these checks do discover a fair number of misread values so do consider any values we suggest as reasonable.

We are experimenting at the moment with a new method of comparing daily values of sunshine using a computer plotted chart. This new method looks very promising and will probably replace the present areal checking of sunshine in the near future.

What is Met 0 3?

This is a question which comes to many new observers' minds and I hope to provide an answer to it.

Met 0 3 is one of the twenty two branches which make up the Headquarters of the Meteorological Office, Bracknell. It is concerned with Climatological Services, and most of it is in the Main building. A small part of Met 0 3 is accommodated in another building about half a mile away.

The function of Met 0 3 is to accept meteorological observations from many sources, to check them for accuracy and validity, and then to make them available in various forms to anyone needing to use them. To carry out these functions, the Branch is divided into three main parts:

Met 0 3a - Data acquisition, publishing and archiving

Met 0 3b - Replies to inquiries

Met 0 3c - Marine Climatology

There are also sub-headquarters at Edinburgh and Belfast which carry out these three functions for Scotland and Northern Ireland.

On this occasion the emphasis will be on the work of Met 0 3a leaving Met 0 3b and Met 0 3c for later occasions.

When the weekly and monthly returns of data arrive and their arrival has been recorded, they are sent to the branch responsible for the operation of our computer. Here, all the data from the forms are keyed into the computer. Special programs have been written which cause the computer to search through the data for any items which are unusual, or, in some cases, impossible. These items are listed, and are then very carefully scrutinized to see whether they may be accepted as they are, or whether they should be changed. If a change is considered necessary, reference is made back to the station which made the observation and a new value agreed. The work of scrutinizing data is carried out by nine people in two rooms.

Once the data are considered to be correct, they then become available for use in research, for replying to inquiries or for publication.

The data are used by researchers both within and outside the Meteorological Office in connection with a wide variety of subjects. There is a small research unit within Met O 3 investigating climatological methods of processing data.

Another part of Met O 3 concentrates on the preparation of climatological data for publication, not only in the Monthly Weather Report, but also in a number of other publications.

Eventually the data are stored away in two Archives. The older of these is essentially a store-room for all the climatological returns we receive. Here, amongst rows and rows of shelves, are stacked hundreds of returns and old observation books, carefully preserved and indexed, forming the National Meteorological Archive where anyone may go to obtain details of weather in past years. The other Archive was established more recently. Here the data are stored on magnetic tape and are accessible only through the computer. At present this Archive is complete only for recent years (about 20) but as time goes on, not only will new data be added, but we hope to extend it further back into the past.

Letters to the Editor

Cavendish

Suffolk

2 November 1978

Your Newsletter was read with interest and I feel sure that it will be welcomed by all observers.

May I make one small suggestion that in future when naming stations, which are often located in small villages etc, a little more detail is given regards position. For example in the notes of the 1978 blizzard from Chawleigh - which I assume is in the SW - perhaps the nearest town could be added.

The summary of UK weather Jan to June 1978 was interesting - it gives us a chance to compare our results with yours.

For future Newsletters, would it be possible to include a short article on present or future developments in Met Office work that would be of interest to us?

Michael Pizzey

Editor: Your first point has been taken and nearest towns added in brackets. Articles on developments in Met Office work will be included from time to time in future issues, though not in this issue. A note on ACRE - Automatic Climatological Recording Equipment - will be the first, hopefully next September.

Hampstead

7 November 1978

I was very pleased to get the Newsletter. I think it is an excellent idea and we can keep in rather closer contact with Bracknell. I find that I often have problems that I can hardly solve. No. 1. The syphoning rain-gauge sometimes agrees closely with the standard 5" gauge but in heavy rain it is usually less, sometimes 10-12 per cent. It would be interesting to hear of other peoples experiences. Occasionally I get a measurement when a trace is recorded - once it was 0.9 mm but the 5" showed only a trace. Do other people find this at times?

No. 2. Occasionally the sun recorder shows a wide blob instead of the normal trace which is about 2 mm in diameter. One day last month the trace was about 4-5 mm for some hours when it returned to normal. I would like to know the explanation.

No. 3. Do other people sometimes get grass minima that are higher than the air minima? I suspect it is sometimes due to rather long grass which I try to keep short but cannot always get to our station as often as I would like.

I am afraid that I quarrel with your error No. 2 on the page headed "Snow in August". Surely it is possible for the observer to find that it is raining but if it has only just started there may be none in the raingauge if it is gentle? I have seen drops fall on both gauges and evaporate before they could run down. Last month I found that the rainfall on October 17th lasted 2-3 hrs but only 3.0 mm fell but at times it takes 1-2 hrs for 1 mm to fall. I would imagine that 5-10 minutes could easily elapse before it started to trickle down. Other people's views on this would be welcome.

R A Tyssen-Gee

Reply:

Bracknell

16 November 1978

Dear Mr Tyssen-Gee

Very briefly, the difference in your No. 1 is due to the syphoning action when the rain then being funnelled down is not caught by the reservoir; the larger trace at No. 2 is due to flaring in bright sunshine (though if always in the same place it might well be a very minor fault in the sphere); the occurrence of grass minima higher than air temperature (No. 3) is very unusual though is reported from time to time, but the conditions leading to such readings are almost impossible to visualise. I agree with your comment on error No. 2.

D P Smith

Hampstead

23 November 1978

Many thanks for your letter of November 16th. I have been given the same explanation before of the difference between the 2 raingauges but have often felt that the syphoning time loss could only account for a small part of the difference between the readings.

Robert A Tyssen-Gee

Reply:

Bracknell

8 December 1978

Dear Mr Tyssen-Gee

As has already been said in earlier correspondence, the syphoning action of the instrument could account for part of the difference in readings and this difference may be significant during a fall of heavy rain over a short

period. On occasions when the rainfall is less intense but occurring over a longer period the loss due to syphoning action becomes less significant and we have to look to other causes for the difference in total "catch".

Perhaps the most important of these is that we are not comparing "like with like". The Tilting Syphon Rain Recorder stands at a height of 21 inches as compared with the 12 inches of the Standard Raingauge and the diameter of the TSR orifice is 11.3 inches as against 5 inches. In conditions of strong winds we know from our own observations that less catch is obtained in the TSR compared with the 5 inch Raingauge and we may attribute some of this loss to the increased turbulence around the taller, wider rain-recorder. Differences in exposure, however slight, of the two instruments, even those on the same site, may also cause differences in the total catch.

George Swift

Hastings

22 November 1978

As Borough Meteorologist at Hastings Health Resort Station I was very pleased to receive the first Newsletter and consider this to be a very good innovation.

Referring to the article reproduced from the Met. Magazine with particular reference to recognition of long service, I feel I should bring to your attention the service of my predecessor Mr J V Taylor. Mr Taylor commenced work in 1947 and maintained the Station continuously until his retirement in 1974, a period of 27 years. As well as carrying out the normal duties required, he introduced the recording of sea temperatures in 1951 and started a very comprehensive record system of weekly and monthly

statistics covering every aspect of the measurements taken. These records are maintained to this day and are invaluable when preparing reports and answering enquiries from many sources.

Mr Taylor also spent a considerable time at Harrow in 1948 extracting details of Hastings weather statistics on a monthly basis right back to the origins of the Station in 1875.

I would like to express my condolences to and admiration for Mr M Sampson of Chawleigh for his experience on 17 February this year. (1978-Ed). Looking back through my records dating from 1948 I find that the deepest snow recorded at Hastings, not drifts, is only 1 foot on 15 January 1960. Even the winter of 1963 only had 9 inches maximum and 5 years from 1948 have not had snow lying to a measurable depth at 0900 on any days at all. On 17 February I recorded a mere 2 inches of snow.

Finally a look at the weather Hastings over the last 3 months shows a quite unusual pattern of rainfall, or at least lack of it. During August to October only 19 days have had 0.2 mm or more rain making it the driest for this period since 1947 with a total of 42.5 mm. Taking September and October together, with a total of 16.9 mm, it has been the driest since before records commenced in 1875 and October with 4.3 mm the second driest on record, 1897 having had only 2.5 mm.

R A Garrad

Editor: It would be interesting to know if during this winter Mr Garrad has exceeded his record depth of 1 foot of snow.

Dore

Sheffield

I was pleased to receive and very interested to read the Newsletter and the extracts from the Met. Magazine. I look forward to future issues.

There are one or two points about Observational Practices which I would like to make. I appreciate the introduction of Figure 9 for an obscured sky rather than the $\frac{x}{8}$ of previous years. Whilst alterations were being made I hoped that you would introduce - or isn't it a case of re-introduce - Code 99 for a wind that is so variable that you cannot determine any specific direction from which it is blowing. We do not, at this height of 206 m, get many such winds but they happen occasionally. I am surprised that, having retained the column in the Pocket Register, you have omitted the Depth of Fresh Snow from Metform 3208B.

One thing that has always surprised me is that I cannot ever recall seeing an instruction that when the observations are made a fresh bottle is placed in the gauge. This I have done for many years and find the following advantages:

- i. Rainfall can be measured leisurely under cover. With a measure of only 10 mm capacity several readings have to be taken after heavy falls.
- ii. The bottle can be thoroughly dried for use the next day.
- iii. If at the time of observation it is raining heavily, no rainfall is lost. Whilst measuring on site quite a little could be missed.

I am still as interested in "observing" as I was when I started over 20 years ago. It is a pity that I have moved about so much as, having now retired, it is more than likely that I will not be able to carry on long enough to build up the 30 years records you require to produce averages.

Sidney Whitaker

Editor: Mr Whitaker brings up a number of interesting points here but before replying I do hope that it is less rather than more than likely that Mr Whitaker will not be able to carry on long enough to build up the 30 year records.

Code 99 was not re-introduced because the peculiar exposure of some stations eg in fairly deep valleys, led to wind direction 99 being reported with wind speeds of, say, 15 knots. Although these fluctuations of wind direction were known to be real climatologically such changes are of little value, being representative of the site alone. In cases of extremely low wind speeds the direction is, in any case, of no great importance.

The Depth of Fresh Snow has been omitted from Metform 3208B because it is now taken by the computer from the differences of depth of snow reported where this is increased. This almost certainly is not wholly accurate (if only because thawing is not taken into account) but is as accurate as required by Met O 3 who do not, in any case, publish the information. This method of working out the depths was apparently introduced because of the very wide variation between observers which again might have been real but did appear to be very uneven.

Although, as far as I know, no instruction has ever been issued about using a fresh bottle in the raingauge when reading nevertheless the procedure which Mr Whitaker describes is one which is fairly common at Met Office stations especially in fairly damp areas such as Northern Ireland. The advantages which Mr Whitaker describes are real and I would certainly not discourage anyone from following this procedure.

NEWS OF STATIONS

There were a great many changes in the network in 1978. A number of new stations commenced climatological reports, including some previously registered as rainfall stations. Some newcomers had already existed as fully equipped climatological stations having been run for several years by Water Authorities, but they began co-operation with the Meteorological Office for the first time in 1978. From the South West Water Authority, we welcome Delabole (near Tintagel), Melbury (Bideford), Ladock (Truro), Tregastick (Looe), Twist (Axminster) and Hemyock (Wellington), from the Anglian Water Authority Denver (Downham Market), Wixoe (Haverhill), Covenham (Louth) and Driby (Alford), and from the Severn Trent Water Authority Brooksby Hall (Melton Mowbray), Wiseton (Gainsborough) and Barbrook (Sheffield).

The station run by Mr Carswell at Hope (near Welshpool) was closed but Mr Carswell moved to a new site at Forden in the same area and commenced reporting from there in August with no break in record. Brymore replaced Cannington near Bridgwater, Somerset which had a long history of co-operation with us. The Field Studies Council opened a station at High Beach and we are pleased to receive reports from this new station at the Epping Forest Conservation Centre.

Stations which closed during the year included Letham Hill (Berwick-on-Tweed), Stonyhurst (Blackburn), Morley (Derby) and Bugbrooke Mills (Daventry).

G W Swift

ADMIN NOTES FOR AUTHORITIES & OBSERVERS

In the first edition of the Newsletter, we asked stations to contact Met O 1c(3), Eastern Road, Bracknell, Berkshire RG12 2UR, for any supplies of forms, stationery, instruments or equipment that were required. Telephoning or writing directly to us can help speed up delivery of your order and we hope all stations will bear our address in mind when the need arises.

The October 1978 issue of forms was somewhat late in arriving and many stations were without forms or received the wrong kind. We apologise for this though it was due to circumstances beyond our control. A large number of requests for forms and stationery was dealt with by this branch and fortunately our own stocks were equal to the demands. We were able to supply all those who contacted us but this has only made us more anxious to hear from those of you whose annual supply of forms appears insufficient so that we can increase the annual issue in good time for October 1979.

G W Swift

VANDALISM

Wanton destruction of meteorological instruments seems to be on the increase throughout the country. In the last couple of years we have lost the co-operation of three climatological stations due entirely to vandalism. This is a great loss to the Meteorological Office because the longer a station co-operates with us, the greater the value of these data to climatologists for study.

Weather observing is a peaceful occupation which should offend no one regardless of beliefs or attitudes. The data assembled are used for the benefit of the community as a whole. Advice is frequently sought from our climatologists whose efforts may eventually improve our environment. Senseless destruction is depriving us all from a better understanding of the vagaries of our climate.

The cost of replacing the larger items such as screen, raingauge or sunshine recorder, is rising all the time. Without unauthorised interference these items will last a great number of years. Most stations which are liable to interference have made their enclosures very secure indeed. It sometimes

happens that however secure the enclosure appears to be, there are those persons who lurk under cover of darkness for an opportunity to destroy for the sake of destruction. One station had made the enclosure so secure that the vandals, determined to destroy the station, burrowed UNDER the fencing when an entry could not be forced any other way.

On the night of Christmas Day/Boxing Day, another station had its screen smashed with the thermometers, as well as the rain measure which was housed inside. This resulted in a complete break in records until more equipment could be obtained.

Where the enclosure is as secure as is possible to achieve, it may be worthwhile to seek advice from an Insurance Company. There are several companies which are prepared to underwrite damage to the larger, more expensive items, which would relieve the burden of replacement through vandalism should this be necessary.

Désirée Allen

Weather in the United Kingdom

July - December 1978

Although there was a warm, dry and sunny spell during the second week of July, the cool and generally unsettled weather which became established during June continued through most of July also. Climbers on Ben Avon in the Scottish Highlands reported a fall of snow at 900 m on the 6th, and heavy rain and thunderstorms occurred during the last 10 days of July and the early part of August. Hailstones measuring 2 cm in diameter were reported at Coltishall in Norfolk on 30 July. In August thunderstorms caused power failures in Scotland on the 2nd, lightning injured a girl in Lowestoft in Suffolk on the 3rd, and tourists near Aviemore in the

Highlands of Scotland were marooned in their cars on the 4th, when heavy rain caused flooding in the area. The second half of August was drier, but it remained generally cool, and Northern Ireland had its dullest August since 1942. Unsettled weather at the end of the month continued during September in the north, but England and Wales were mostly dry and sunny. It was warm at times in many parts and patches of snow which had remained throughout the summer on the higher Scottish mountains finally disappeared during the third week. October was mostly warm and dry, with monthly rainfall totals in southern England less than 5 mm at a number of places. There have probably been only 4 drier Octobers over England and Wales, taken together, since the record began in 1727. Northern Ireland had its sunniest October since 1959. November was also mostly mild, with sunshine well above average in central England, but it became less settled in the north. A cold spell with wintry showers occurred towards the end of November and continued into early December. Changeable weather followed, and mild spells alternated with colder periods. Heavy rainfall towards the end of December caused severe flooding in parts of northern England. In York the floods were the worst since 1947, rising to about 5 m above the normal level of the River Ouse. Wintry weather with widespread snowfall and easterly winds spread to all areas during the last few days of 1978, and daytime temperatures stayed well below freezing in most places on 31 December.